

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P931379

Luminaire Tested: DFN2DS-TR3F0-060DS927-FLL

Issue Date: 11/20/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P931379  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P333812)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/20/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: DFN2DS-TR3F0-060DS927-FLL  
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens  
Light Source: -  
Ballast/Driver: -

**Summary**

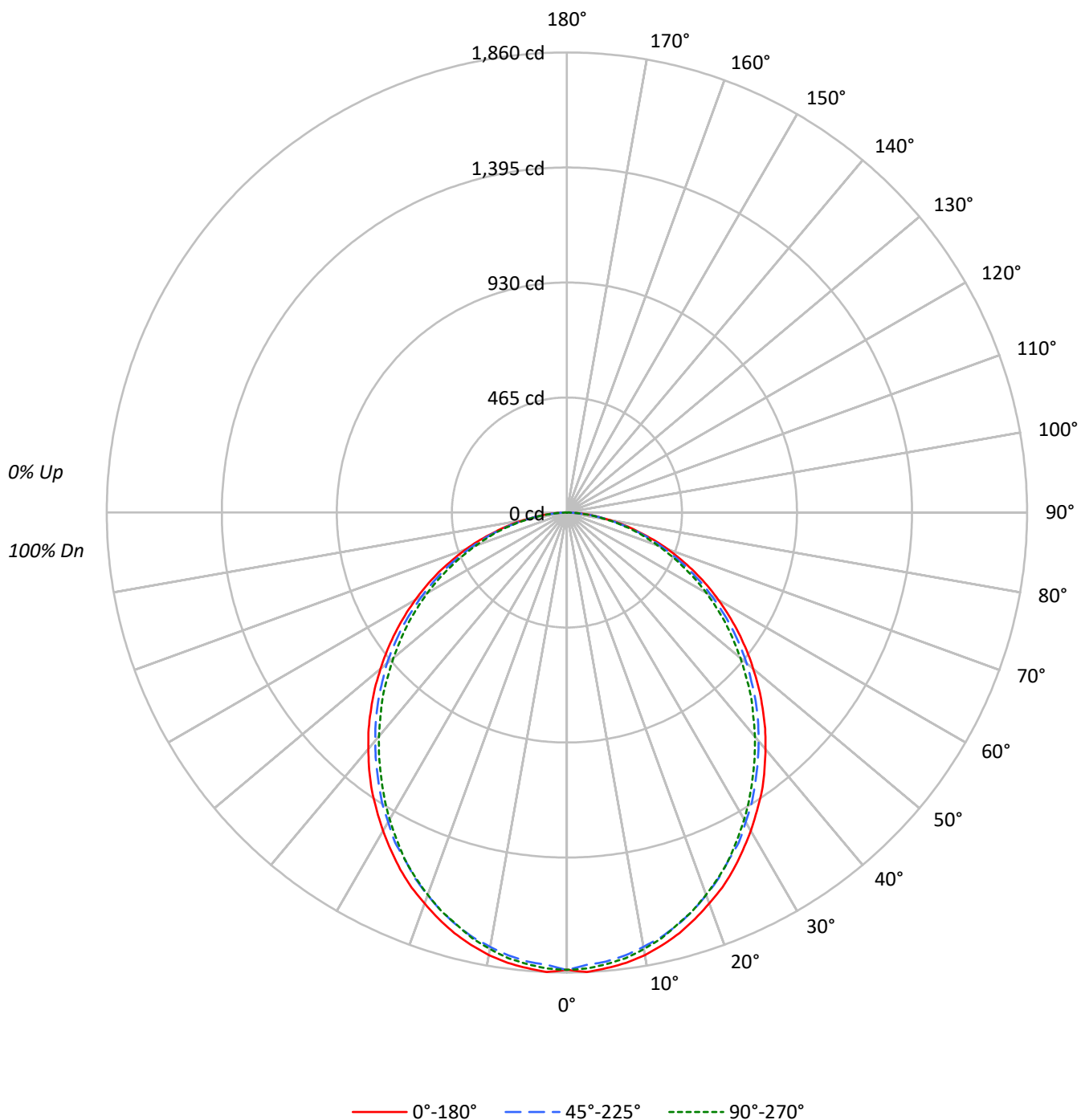
Lumens per Lamp: N/A  
Luminaire Lumens: 4704.5 lumens  
Efficiency: N/A  
Efficacy: 76.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29  
Luminous Opening: Rectangular (W 3.16' x L: 2.74' x H: 0')  
CIE Type: Direct

Input Watts (W): 61.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.9789  
Total Harmonic Distortion (THDi): 0.074  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P931379

CATALOG NUMBER: DFN2DS-TR3F0-060DS927-FLL

### Luminous Intensity Polar Plot



TEST NUMBER: P931379

CATALOG NUMBER: DFN2DS-TR3F0-060DS927-FLL

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|--|-----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |  | 20  |     |     |  | 20  |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |  | 30  |     |     |  | 10  |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  |  | 50  | 30  | 10  |  | 50  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |     |     |     |  |     |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 |  | 106 | 106 | 106 |  | 102 |
| 1   | 109 | 104 | 100 | 96  | 106 | 102 | 98  | 95  | 98  | 95  | 92  |  | 94  | 91  | 89  |  | 90  |
| 2   | 99  | 91  | 85  | 79  | 97  | 89  | 83  | 78  | 86  | 81  | 76  |  | 83  | 78  | 74  |  | 80  |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 65  | 76  | 69  | 64  |  | 73  | 68  | 63  |  | 71  |
| 4   | 83  | 71  | 63  | 56  | 81  | 70  | 62  | 56  | 68  | 61  | 55  |  | 65  | 59  | 54  |  | 63  |
| 5   | 77  | 64  | 55  | 49  | 75  | 63  | 55  | 48  | 61  | 53  | 48  |  | 59  | 52  | 47  |  | 57  |
| 6   | 71  | 58  | 49  | 43  | 69  | 57  | 48  | 42  | 55  | 48  | 42  |  | 53  | 47  | 42  |  | 52  |
| 7   | 66  | 52  | 44  | 38  | 64  | 52  | 43  | 38  | 50  | 43  | 37  |  | 49  | 42  | 37  |  | 47  |
| 8   | 61  | 48  | 40  | 34  | 60  | 47  | 39  | 34  | 46  | 39  | 33  |  | 45  | 38  | 33  |  | 44  |
| 9   | 57  | 44  | 36  | 30  | 56  | 43  | 36  | 30  | 42  | 35  | 30  |  | 41  | 35  | 30  |  | 40  |
| 10  | 54  | 41  | 33  | 28  | 53  | 40  | 33  | 28  | 39  | 32  | 27  |  | 38  | 32  | 27  |  | 37  |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 2304 | 2304 | 2304 |
| 5°  | 2313 | 2280 | 2293 |
| 10° | 2299 | 2256 | 2268 |
| 15° | 2271 | 2227 | 2225 |
| 20° | 2230 | 2183 | 2181 |
| 25° | 2190 | 2129 | 2129 |
| 30° | 2139 | 2080 | 2062 |
| 35° | 2091 | 2020 | 1991 |
| 40° | 2030 | 1961 | 1923 |
| 45° | 1971 | 1902 | 1855 |
| 50° | 1906 | 1841 | 1775 |
| 55° | 1839 | 1769 | 1704 |
| 60° | 1763 | 1684 | 1622 |
| 65° | 1683 | 1599 | 1526 |
| 70° | 1581 | 1496 | 1425 |
| 75° | 1438 | 1377 | 1344 |
| 80° | 1277 | 1237 | 1173 |
| 85° | 1041 | 992  | 891  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
Vertical Angle: 45°  
Luminance: 1971 cd/sqm

TEST NUMBER: P931379

CATALOG NUMBER: DFN2DS-TR3F0-060DS927-FLL

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 174.0  | 3.7       |
| 10°-20°   | 489.7  | 10.4      |
| 20°-30°   | 719.6  | 15.3      |
| 30°-40°   | 835.8  | 17.8      |
| 40°-50°   | 834.7  | 17.7      |
| 50°-60°   | 727.9  | 15.5      |
| 60°-70°   | 538.1  | 11.4      |
| 70°-80°   | 304.4  | 6.5       |
| 80°-90°   | 80.3   | 1.7       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 1383.3 | 29.4      |
| 0°-40°    | 2219.1 | 47.2      |
| 0°-60°    | 3781.7 | 80.4      |
| 0°-90°    | 4704.5 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4704.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1849 | 1849  | 1849 | 1849  | 1849 |      |
| 5°  | 1849 | 1842  | 1822 | 1837  | 1833 | 176  |
| 15° | 1760 | 1750  | 1726 | 1734  | 1725 | 496  |
| 25° | 1593 | 1579  | 1549 | 1552  | 1549 | 733  |
| 35° | 1374 | 1357  | 1328 | 1317  | 1308 | 858  |
| 45° | 1118 | 1106  | 1079 | 1060  | 1053 | 863  |
| 55° | 846  | 836   | 814  | 793   | 784  | 757  |
| 65° | 571  | 560   | 542  | 526   | 517  | 564  |
| 75° | 299  | 295   | 286  | 276   | 279  | 319  |
| 85° | 73   | 71    | 69   | 64    | 62   | 86   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



TEST NUMBER: P931379

CATALOG NUMBER: DFN2DS-TR3F0-060DS927-FLL

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1849.0 | 1849.0 | 1849.0 | 1849.0 | 1849.0 |
| 2.5°  | 1859.8 | 1850.9 | 1831.3 | 1849.0 | 1845.6 |
| 5°    | 1849.0 | 1842.0 | 1822.4 | 1836.6 | 1833.2 |
| 7.5°  | 1836.6 | 1826.0 | 1806.4 | 1820.7 | 1817.2 |
| 10°   | 1817.2 | 1804.7 | 1783.3 | 1797.5 | 1792.2 |
| 12.5° | 1790.4 | 1779.8 | 1758.5 | 1767.3 | 1763.8 |
| 15°   | 1760.1 | 1749.6 | 1726.4 | 1733.6 | 1724.7 |
| 17.5° | 1722.8 | 1712.3 | 1689.1 | 1697.9 | 1689.1 |
| 20°   | 1681.9 | 1671.4 | 1646.4 | 1651.7 | 1644.7 |
| 22.5° | 1641.2 | 1625.1 | 1601.9 | 1601.9 | 1598.3 |
| 25°   | 1593.0 | 1578.9 | 1548.7 | 1552.1 | 1548.7 |
| 27.5° | 1539.6 | 1527.2 | 1504.2 | 1498.9 | 1490.1 |
| 30°   | 1486.5 | 1472.1 | 1445.6 | 1440.3 | 1433.0 |
| 32.5° | 1429.5 | 1418.9 | 1390.4 | 1379.7 | 1372.5 |
| 35°   | 1374.4 | 1356.7 | 1328.2 | 1317.4 | 1308.5 |
| 37.5° | 1312.2 | 1296.1 | 1267.7 | 1255.2 | 1246.3 |
| 40°   | 1248.2 | 1233.9 | 1205.4 | 1189.6 | 1182.4 |
| 42.5° | 1185.9 | 1171.6 | 1143.3 | 1125.4 | 1114.8 |
| 45°   | 1118.5 | 1105.9 | 1079.2 | 1059.8 | 1052.6 |
| 47.5° | 1052.6 | 1040.1 | 1011.7 | 992.1  | 981.4  |
| 50°   | 983.2  | 974.3  | 949.4  | 924.5  | 915.6  |
| 52.5° | 915.6  | 903.2  | 880.1  | 860.6  | 848.2  |
| 55°   | 846.4  | 835.6  | 814.3  | 793.0  | 784.2  |
| 57.5° | 777.0  | 768.2  | 745.0  | 723.7  | 716.4  |
| 60°   | 707.6  | 700.6  | 675.7  | 656.1  | 650.8  |
| 62.5° | 640.0  | 627.6  | 609.8  | 592.1  | 585.0  |
| 65°   | 570.8  | 560.1  | 542.4  | 526.3  | 517.4  |
| 67.5° | 499.7  | 490.6  | 474.8  | 462.4  | 455.2  |
| 70°   | 433.9  | 426.7  | 410.7  | 398.2  | 391.2  |
| 72.5° | 366.3  | 359.2  | 350.3  | 337.9  | 332.6  |
| 75°   | 298.6  | 295.3  | 286.1  | 275.6  | 279.2  |
| 77.5° | 238.2  | 231.1  | 227.5  | 222.2  | 216.9  |
| 80°   | 177.9  | 176.0  | 172.4  | 167.1  | 163.5  |
| 82.5° | 120.9  | 120.9  | 119.2  | 112.1  | 112.1  |
| 85°   | 72.8   | 71.1   | 69.4   | 63.9   | 62.3   |
| 87.5° | 32.1   | 28.5   | 24.9   | 19.6   | 17.7   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

TEST NUMBER: P931379

CATALOG NUMBER: DFN2DS-TR3F0-060DS927-FLL

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 14.18            | 15.79 | 14.55 | 16.11 | 16.42 | 13.74          | 15.35 | 14.10 | 15.66 | 15.98 |
|                 | 3H   | 15.93            | 17.39 | 16.31 | 17.71 | 18.07 | 15.44          | 16.90 | 15.82 | 17.22 | 17.58 |
|                 | 4H   | 16.58            | 17.95 | 16.98 | 18.30 | 18.67 | 16.08          | 17.45 | 16.48 | 17.80 | 18.18 |
|                 | 6H   | 17.05            | 18.32 | 17.46 | 18.68 | 19.07 | 16.55          | 17.82 | 16.96 | 18.18 | 18.57 |
|                 | 8H   | 17.19            | 18.40 | 17.62 | 18.79 | 19.19 | 16.69          | 17.90 | 17.11 | 18.29 | 18.69 |
|                 | 12H  | 17.28            | 18.44 | 17.71 | 18.82 | 19.25 | 16.77          | 17.93 | 17.20 | 18.31 | 18.74 |
| 4H              | 2H   | 14.74            | 16.11 | 15.14 | 16.46 | 16.84 | 14.39          | 15.76 | 14.79 | 16.11 | 16.48 |
|                 | 3H   | 16.72            | 17.86 | 17.13 | 18.26 | 18.66 | 16.31          | 17.46 | 16.72 | 17.86 | 18.26 |
|                 | 4H   | 17.49            | 18.53 | 17.93 | 18.94 | 19.38 | 17.07          | 18.11 | 17.50 | 18.52 | 18.96 |
|                 | 6H   | 18.09            | 19.00 | 18.55 | 19.44 | 19.89 | 17.66          | 18.56 | 18.11 | 19.00 | 19.46 |
|                 | 8H   | 18.28            | 19.13 | 18.74 | 19.57 | 20.04 | 17.84          | 18.69 | 18.30 | 19.13 | 19.60 |
|                 | 12H  | 18.41            | 19.17 | 18.89 | 19.65 | 20.12 | 17.96          | 18.72 | 18.44 | 19.20 | 19.67 |
| 8H              | 4H   | 17.77            | 18.61 | 18.23 | 19.06 | 19.52 | 17.39          | 18.24 | 17.85 | 18.68 | 19.15 |
|                 | 6H   | 18.48            | 19.19 | 18.98 | 19.67 | 20.15 | 18.10          | 18.80 | 18.59 | 19.29 | 19.77 |
|                 | 8H   | 18.74            | 19.37 | 19.25 | 19.88 | 20.37 | 18.35          | 18.98 | 18.86 | 19.49 | 19.97 |
|                 | 12H  | 18.94            | 19.50 | 19.45 | 19.99 | 20.55 | 18.53          | 19.09 | 19.04 | 19.58 | 20.14 |
| 12H             | 4H   | 17.79            | 18.55 | 18.27 | 19.03 | 19.50 | 17.43          | 18.19 | 17.91 | 18.67 | 19.13 |
|                 | 6H   | 18.53            | 19.16 | 19.04 | 19.67 | 20.15 | 18.16          | 18.79 | 18.67 | 19.30 | 19.78 |
|                 | 8H   | 18.84            | 19.40 | 19.35 | 19.89 | 20.45 | 18.46          | 19.02 | 18.97 | 19.51 | 20.07 |